



Published in final edited form as:

J Adolesc Health. 2014 August ; 55(2): 293–300. doi:10.1016/j.jadohealth.2014.02.009.

Differentiating youth who are bullied from other victims of peer-aggression: the importance of differential power and repetition

Michele L. Ybarra, MPH PhD*,

Center for Innovative Public Health Research, San Clemente, CA

Dorothy L. Espelage, PhD, and

University of Illinois, Champaign, IL

Kimberly J. Mitchell

Crimes against Children Research Center, University of New Hampshire, Durham, NH

Abstract

Purpose—Examine whether: 1) among youth who report being bullied, differential power and repetition are useful in identifying youth who are more or less affected by the victimization experience; and 2) bullying and more generalized peer aggression are distinct or overlapping constructs.

Methods—Data for the Teen Health and Technology (THT) study were collected online between August 2010 and January 2011 from 3,989 13–18 year olds. Data from the Growing up with Media (GuwM) study (Wave 3) were collected online in 2008 from 1,157 12–17 year olds.

Results—In the THT study, youth who reported neither differential power nor repetition had the lowest rates of interference with daily functioning. Youth who reported either differential power or repetition had higher rates; but the highest rates of interference with daily functioning were observed among youth who reported both differential power and repetition. In the GuwM study, youth were victims of online generalized peer aggression (30%) or both online generalized peer aggression and cyberbullying (16%), but rarely cyberbullying alone (1%).

Conclusions—Both differential power and repetition are key in identifying youth who are bullied and at particular risk for concurrent psychosocial challenge. Each feature needs to be measured directly. Generalized peer aggression appears to be a broader form of violence compared to bullying. It needs to be recognized that youth who are victimized but do not meet the criteria of bullying have elevated rates of problems. They are an important, albeit non-bullied, group of victimized youth to be included in research.

© 2014 Society for Adolescent Medicine. Published by Elsevier Inc. All rights reserved.

*Corresponding author: 555 El Camino Real #A347, San Clemente, CA 92672; phone number: 877 302 6858; Michele@InnovativePublicHealth.org.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Keywords

Bullying; victimization; measurement; methodology; cyberbullying; differential power

Bullying victimization is associated with psychosocial problems including depressive symptomatology, social and behavior problems, and substance use concurrently [1–4]; and poor psychosocial functioning over time [2, 5–7]. Depending on the definition, measure, and methodology used, prevalence rates range between 9% [8] and 72% [9]. This wide variation has resulted in measurement issues increasingly being examined [10, 11].

Measurement Challenge #1

Bullying is traditionally defined as repeated aggression that is committed by a perpetrator who has more power than the victim [12]. Some researchers have argued that differential power is *the* central defining factor that differentiates bullying from other types of peer victimization [13, 14]. We lack data about whether and how this feature differentiates youth who may be more affected. If significant differences in mental health outcomes are attributable to the power dynamic, then differential power should be measured directly.

Measurement Challenge #2

Many researchers use the frequency response of the item (e.g., everyday) as a proxy for repetition. Bullying may also occur repetitively over a short period of time, and then cease (e.g., because it was successfully addressed) [15]. Ybarra and colleagues found that the addition of a direct follow-up measure of repetition did not significantly increase the precision of the measure [10]. This needs to be replicated.

Measurement Challenge #3

In Internet victimization research particularly, studies of generalized peer aggression (sometimes coined “Internet harassment” [16, 17]) have been included in reviews of bullying. This conflation is one explanation for the wide range of “cyberbullying” prevalence rates in the literature. For, if generalized peer aggression is a broader form of victimization, we would expect higher prevalence rates for generalized peer aggression than for bullying, which has a more narrow definition. We also would expect that youth who are bullied would be identified as victims of generalized peer aggression. This is the first study to test the hypothesis that generalized peer aggression and bullying overlap when assessed separately within the same study using the same sampling and data collection methodology; and measure time frame.

Methods

The first two measurement challenges are addressed using data from the Teen Health and Technology (THT) survey; the third measurement challenge uses data from the Growing up with Media (GuwM) Study.

Study 1

Data for the THT Study were collected online between August 2010 and January 2011 from 5,907 13–18 year olds in the United States. The survey protocol was reviewed and approved by the Chesapeake Institutional Review Board (IRB), which is a private, paid Office for Human Research Protections (OHRP)-approved IRB, the University of New Hampshire IRB, and GLSEN (Gay, Lesbian and Straight Education Network) Research Ethics Review Committee.

Participants for the current analyses were recruited from the Harris Poll Online (HPOL) opt-in panel (n=3,989). [An over-sample of 1,918 lesbian, gay, bisexual, and transgender youth were recruited through GLSEN's listserv and advertisements on Facebook. The oversample were excluded here because analyses are focused on the general adolescent population rather than on differences by sexual or gender identity.] HPOL respondents were invited through email invitations that referred to a survey about their "online experiences." The survey questionnaire was self-administered online. Qualified respondents were: 1) United States residents; 2) 13–18 years old; 3) in 5th grade or above; and 4) provided informed assent. Median survey length was 23 minutes. The survey response rate was 7%.

Measures—Previous research suggests that inclusion of the word 'harassment' does not affect endorsement rates of bullying [10]. As such, bullying was presented to youth with the following text: "Now we have some questions for you about bullying and harassment. Remember, you do not have to answer any questions you do not want to. Bullying and harassment can happen anywhere, like at school, at home, or other places you hang out. In the past 12 months, how often were you bullied or harassed by someone about your age...?" 1) In person, 2) By phone call, 3) By Text message, and 4) Online. Next, youth were asked: In the past 12 months, how often have others about your age bullied or harassed you by...? 1) Hitting, kicking, pushing, or shoving you, 2) Making threatening or aggressive comments to you, 3) Calling you mean names, 4) Making fun of you or teasing you in a nasty way, 5) Leaving you out or not letting you into a group because they were mad at you or were trying to make you upset, 6) Spreading rumors about you, whether they were true or not, and 7) Bullying or harassing you in some other way.

Response options were: 1) never in the past 12 months, 2) once or a few times in the past 12 months, 3) once or a few times a month, 4) once or a few times a week, and 5) every day or almost every day to indicate **frequency**.

Youth who indicated they had been bullied at least once either through some mode or in some way were asked a follow-up question about **differential power**: "Was it by someone who had more power or strength than you? This could be because the person was bigger than you, had more friends, was more popular, or had more power than you in another way." (Yes/no).

As an indicator of **repetition**, the youth who were bullied were also asked: "When you were bullied or harassed in the past year, was it done repeatedly, so that it happened again and again?" (Yes/no)

Based upon these items, youth were categorized into one of seven groups: 1) Not bullied (i.e., 'never in the past 12 months' on all bullying questions), 2) Bullied + equal power ('once or a few times in the past 12 months'); 3) Bullied + differential power (i.e., 'once or a few times in the past 12 months' to at least one bullying item and 'yes' to the question of differential power); 4) Bullied + repeated (less than monthly) (i.e., 'once or a few times in the past 12 months' to at least one bullying item and 'yes' to the question of repetition); 5) Bullied + frequently (i.e., 'once or a few times a month' or more frequently on at least one of the bully items, irrespective of their answer to the question about repetition); 6) Bullied + differential power + repeated (less than monthly) (i.e., 'once or a few times in the past 12 months' to at least one bullying item and 'yes' to both the question of differential power and repetition); and 7) Bullied + differential power + frequently (i.e., 'once or a few times a month' or more often to at least one bullying item and 'yes' to the question of differential power, irrespective of their answer to the question about repetition). Categories #5 and 7 ignore the question of repetition because it reflects the youth who would be identified through the response options (i.e., without the additional follow-up).

Questions about the impact of the bullying (e.g., how much it interfered with relationships with friends, family; how upset they felt about it) were asked of youth who reported any type of bullying. Psychosocial indicators, including alcohol use [18], depressive symptomatology [20], self-esteem [21], social support from friends and a special person [22], and caregiver-child relationships [8, 23] were asked of all youth. The survey instrument can be downloaded at: <http://innovativepublichealth.org/projects/teenhealth-and-technology/>

Study 2

Wave 3 of the GuwM Study was collected in 2008. The survey protocol was reviewed and approved by the Chesapeake IRB. Caregivers provided informed consent for their participation and permission for their child's participation; youth provided informed assent.

Adult respondents were recruited at baseline through an email sent to randomly-identified adult Harris Poll OnLine (HPOL) panel members who reported having a child living in the household. Eligible adults were equally or more knowledgeable than other adult household members about the youth's home media use. Youth participants were 10–15 years old (M: 12.7 years, SD: 1.8 years) at baseline, read English, lived in the household at least 50% of the time, and had used the Internet in the last six months. The response rate at baseline was 31%. Of the 1,586 households who completed the baseline survey, 73% (n=1,157) responded at Wave 3.

Measures—Five items were used to measure generalized peer aggression: 1) someone made a rude or mean comment to youth while online; 2) someone spread rumors about the youth online, whether they were true or not; 3) someone made threatening or aggressive comments to youth online; 4) someone posted a video or picture online that showed the youth being hurt or embarrassed; and 5) someone the youth's age took them off their buddy list or other online group because the person was mad at the youth. The first item was from the Youth Internet Safety Survey [8, 16], the second was adapted from an item in the

Aggression-Problem Behavior Frequency Scale [19], and the last three items were specifically created for this survey. The items were inter-related (Cronbach's alpha = 0.84).

Bullying was queried with the following text: "The next questions are about bullying and harassment. We say a young person is being bullied or harassed when someone else or a group of people repeatedly hits, kicks, threatens, or says nasty or unpleasant things to them. Another example is when no one ever talks to them. These things can happen at school, online, or other places young people hang out. It is not bullying when two young people of about the same strength fight or tease each other." Five different communication modes were queried (e.g., at school, on the Internet, etc.). To allow for direct comparisons to generalized peer aggression, we focus on youth who reported bullying "on the Internet."

Both generalized peer aggression and bullying item responses were captured on a 5-point scale: Never, Less often than once a month, Once or twice a month, once or twice a week, Every day / almost every day.

Based upon their responses to these questions, youth were placed into one of five categories: 1) not online victimization (i.e., 'no' to all generalized peer aggression and bullying questions); 2) Victim of online generalized peer aggression (only) (i.e., 'yes' to at least one peer aggression item and 'no' to the bullying question'); 3) Victim of online generalized peer aggression and cyberbullying (infrequent) (i.e., bullied less often than monthly, irrespective of their responses to the peer aggression items); 4) Victim of generalized peer aggression and cyberbullying (frequent) (i.e., bullied monthly or more frequently, irrespective of their responses to the peer aggression items); or 5) Victim of cyberbullying (any frequency) only (i.e., 'no' to all peer aggression items and yes to the bullying question).

Psychosocial indicators, including alcohol use [18], depressive symptomatology [20], and one's emotional closeness to one's caregiver [8, 23], general media use (i.e., frequency and intensity of television, Internet, music, and game consumption); and demographic characteristics were asked of all youth. The survey instrument can be downloaded at: <http://innovativepublichealth.org/projects/growing-up-with-media/>.

Weighting and data management—HPOL data are comparable to data that have been obtained from random telephone samples of adult populations once appropriate sample weights are applied [24–27]. In Study 1, youth participants were weighted to known demographics of 13–18 year olds based on the 2009 Current Population Survey (CPS). In Study 2, data were weighted statistically at Wave 1 to reflect the population of adults with children ages 10–15-years old in the U.S. according to adult age, sex, race/ethnicity, region, education, household income, and child age and sex [28]. Survey sampling weights also adjusted for adult respondents' self-selection into the HPOL as well as accounted for differential participation over time [24–27].

In both studies, missing data were imputed using Stata's 'impute' command [29]. In most cases, this affected less than 7% of respondents for any one variable. Respondents who gave valid answers for less than 80% of the survey; or in the THT Study, who also do not meet

valid data requirements (i.e., survey length was less than 5 minutes) were dropped. As a result, the final analytical sample for GuwM was 1,150 respondents, and for THT was 3,777.

Data analyses—For Study 1, we first examined the overlap among bullying involving: differential power, differing frequency, and repetition. Next we examined rates of interference with daily functioning across the different bullying categories. Finally, using multinomial logistic regression, we estimated the relative odds of being in one of the multiple bullying categories versus not being bullied given psychosocial indicators (e.g., depressive symptomatology) and demographic characteristics. In Study 2, we examined the overlap in reports of generalized peer aggression and cyberbullying. We then used multinomial logistic regression to estimate the relative odds of being a victim of generalized peer aggression and/or bullying versus not being a victim, given psychosocial and demographic characteristics.

Results

Study 1

Sixty percent of youth reported being bullied, 42% of whom said that the bully had more power than they did and 30% of whom said that it was repeated. Differential power between victim and perpetrator was associated with greater frequency of bullying: 35% of youth with a more powerful bully were victimized weekly or more often versus 13% of youth with an equally powerful bully ($p<0.001$). Power also was related to repetition: 50% of youth bullied by someone with greater power said it happened repeatedly, compared to 16% of youth bullied by someone who did not have more power than them ($p<0.001$). Among youth who reported being bullied repeatedly and by someone with more power, 79% indicated it occurred frequently (monthly or more often) and 21% indicated it occurred infrequently (less than monthly). Endorsement of differential power, repetition, and frequency of bullying is shown in Figure 1.

Impact of bullying—Rates of interference with daily functioning, bullying-related distress, and indicators of hopelessness and helplessness increased as more features of bullying were endorsed (see Table 1). For example, 6% of youth who reported being bullied by someone with equal power also reported that the bullying interfered with their school work whereas 10% of youth who reported being bullied by someone with differential power, 14% who reported that it was repeated (but less than monthly), and 26% who reported that it was frequent (monthly or more often) reported the bullying interfered with school work ‘somewhat’ or ‘a lot’ (see Table 1). In comparison, 40% of youth who reported both differential power and repetition of bullying reported that it affected their school work, as did 50% of youth who reported differential power and frequent bullying (occurring monthly or more often). One exception to the trend: Youth who reported repeated bullying by someone with equal power had the lowest rates of endorsement that people in their lives cannot protect them.

Among youth who did not report differential power, those who reported frequent bullying were significantly more likely to report interference with their family relationships and to disagree that there are people who could protect them from the bullying, whereas those who

reported repeated bullying were more likely to report being upset by the bullying. Among youth who were bullied by someone who had more power, those who were bullied frequently were more likely to say that bullying was just a part of life than those who were bullied repeatedly but not frequently.

Psychosocial functioning related to bullying—As shown in Table 2, as one's self-esteem increased, the relative odds of being bullied – irrespective of whether it was repeated or frequent or by someone with more power than they or not – decreased significantly. The same inverse relation was noted for social support and age (with the exception of those who were bullied repeatedly), such that as social support and age increased, the odds of being bullied decreased. In almost all cases, White youth were significantly more likely than non-White youth to report being bullied. Other, less consistent associations were noted for poor caregiver child relationships, female gender, and low income.

Study 2

As shown in Figure 2, slightly more than half of youth (53%) did not report any type of online victimization in the past year. Less than one in three youth (30%) reported generalized peer aggression only and only 1% reported being cyberbullied only. Sixteen percent reported both cyberbullying victimization (frequent and infrequent) and generalized peer aggression.

As shown in Table 3, the relative odds of being a victim versus not being a victim were significantly higher for youth who reported alcohol use, and this was particularly true for frequent cyberbullying victimization (adjusted odds ratio [aOR] = 7.53, $p = .001$). Compared to not being a victim, the relative odds of online victimization significantly increased with each incremental increase in media use, depressive symptomatology, and poor caregiver-child relationship score for two of the three victim types; and was borderline significant for the third.

Discussion

Youth who are bullied repetitively (as measured either by frequency or repetition) and by someone with greater power are more likely to report greater interference with their relationships with family and friends, and their school work; to be upset by the bullying; and to have a sense of hopelessness and helplessness about bullying in general - even compared to youth who report being bullied but without both features. Both differential power *and* repetition are key features for differentiating youth who are particularly affected by the victimization. Each needs to be measured, even in surveys that provide a definition of bullying, to increase measurement validity and decrease variation in prevalence rates across studies. To measure repetition, the current findings support common practice [30–32]: using a frequency measure embedded in the response option of the main bullying question. That said, one in five youth who reported being bullied repeatedly and by someone with more power indicated it occurred infrequently (less than monthly). These youth differed from youth who were frequently bullied (but who did not endorse the question about repetitive bullying) in their belief that being bullied was just a part of life – perhaps reflecting that the victimization was successfully stopped for these youth before it became a frequent event

over time [15]. Space permitting, researchers are encouraged to include a direct follow-up question about repetition; otherwise, the frequency response options could be a proxy. A direct follow-up question for differential power is essential in all bullying surveys.

Findings further suggest that online generalized peer aggression and cyberbullying are overlapping but sometimes distinct types of youth victimization. Most youth who are victims of cyberbullying are also victims of generalized peer aggression, but the converse is not necessarily true. Thus, under the umbrella of 'peer victimization', the findings support the assertion that generalized peer aggression (sometimes called 'Internet harassment') is a broader form, whereas cyberbullying is a more specific form of peer victimization. This finding also explains some of the variation in prevalence rates noted previously. When generalized peer aggression is queried, rates are higher than when bullying is queried. Moreover, varying degrees of victimization appear to be associated with gradations of concurrent psychosocial challenge; but all victimization is associated with elevated personal challenge. Research should include a broader range of victimization experiences while also being clear in their terminology to distinguish between victims of bullying and victims of generalized peer aggression.

Findings should be interpreted within study limitations. Data are based upon self-report from samples randomly identified from within one online panel. Study 2 data only included measures of generalized peer aggression online, however results should be replicated with peer victimization that occurs in other modes (e.g., in-person). Like other recent studies, response rates were low [33, 34]. This is a threat to external validity. While survey researchers are unsure about how to invigorate response rates, it seems fair to say that findings should be replicated using different methodologies to ensure consistency of findings.

Clinical implications

The power differential measured in this study reflects the respondent's *perception*. External observers might have a different appraisal of the power dynamic. Perhaps this perception influences the victim's sense of control of the situation, or their (in)ability to 'fight back.' This is consistent with extant literature that suggests youth who are victimized by peers and engage in internal attributions (e.g., self-blame) are more likely to be distressed than youth who engage in external attributions [35, 36]. In this case, the relation between attributions and outcomes might be partially explained by perceptions of a power differential. Helping youth recognize their agency in the situation may help counter-act this. It needs to be acknowledged however, that sometimes perceptions match reality such that correcting attributions fails to acknowledge the true power differential when it exists. In this case, the issue is not addressing perception, but rather partnering with the victim to identify concrete ways in which they can shift the balance of power (e.g., by having a friend who will defend victim).

Conclusion

The way in which bullying is measured affects the resulting estimates of youth affected. Both differential power and repetition are important in identifying youth who are at

particular risk for concurrent psychosocial challenge. It also needs to be recognized that youth who are victimized but do not meet the criteria of bullying also have elevated rates of psychosocial problems over non-victimized youth, and are an important, albeit non-bullied, group of victimized youth to be included in research [37].

Acknowledgments

Everyone who contributed significantly to the work is listed as an author. Authors are listed in order of contribution; there is no senior author.

Growing up with Media: This survey was supported by Cooperative Agreement number U49/CE000206 from the Centers for Disease Control and Prevention (CDC). The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of the CDC. We would like to thank the entire Growing up with Media Study team from the Center for Innovative Public Health Research (formally Internet Solutions for Kids), Harris Interactive, Johns Hopkins Bloomberg School of Public Health, and the CDC, who contributed to the planning and implementation of the study. Finally, we thank the families for their time and willingness to participate in this study.

Teen Health and Technology: The project described was supported by Award Number R01 HD057191 from the National Institute of Child Health and Human Development. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Child Health and Human Development or the National Institutes of Health. We would like to thank the entire Study team from the Center for Innovative Public Health Research (formally Internet Solutions for Kids), the University of New Hampshire, the Gay Lesbian Straight Education Network (GLSEN), La Trobe University, and Harris Interactive, who contributed to the planning and implementation of the study. Finally, we thank the study participants for their time and willingness to participate in this study.

List of abbreviations

GLSEN	Gay, Lesbian and Straight Education Network
GuwM	Growing up with Media
HPOL	Harris Poll Online
IRB	Institutional Review Board
OHRP	Office for Human Research Protections
THT	Teen Health and Technology

References

1. Cook CR, Williams KR, Guerra NG, et al. Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *Sch Psychol Q.* 2010; 25:65–83.10.1037/a0020149
2. Copeland WE, Wolke D, Angold A, et al. Adult psychiatric outcomes of bullying and being bullied by peers in childhood and adolescence. *JAMA Psychiatry.* 2013; 70:419–426.10.1001/jamapsychiatry.2013.504 [PubMed: 23426798]
3. Nansel TR, Overpeck M, Pilla RS, et al. Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *JAMA.* 2001; 285:2094–2100.10.1001/jama.285.16.2094 [PubMed: 11311098]
4. Espelage DL, Low S, De La Rue L. Relations between peer victimization subtypes, family violence, and psychological outcomes during early adolescence. *Psychol Violence.* 2012; 2:313–324.10.1037/a0027386
5. Gini G, Pozzoli T. Bullied children and psychosomatic problems: A metaanalysis. *Pediatrics.* 2013; 132:720e9. [PubMed: 24043275]

6. Ttofi MM, Farrington DP, Lösel F, et al. Do the victims of school bullies tend to become depressed later in life? A systematic review and meta-analysis of longitudinal studies. *J Aggress Confl Peace Res.* 2011; 3:63–73.
7. Reijntjes A, Kamphuis JH, Prinzie P, et al. Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect.* 2010; 34:244–252. <http://dx.doi.org/10.1016/j.chiabu.2009.07.009>. [PubMed: 20304490]
8. Wolak, J.; Mitchell, KJ.; Finkelhor, D. Online victimization of youth: 5 years later. Alexandria, VA: National Center for Missing & Exploited Children; 2006. Available at: <http://www.unh.edu/ccrc/pdf/CV138.pdf> [Accessed April 26, 2013]
9. Juvonen J, Gross EF. Extending the school grounds?-- Bullying experiences in cyberspace. *J Sch Health.* 2008; 78:496–505.10.1111/j.1746-1561.2008.00335.x [PubMed: 18786042]
10. Ybarra ML, Boyd D, Korchmaros JD, et al. Defining and measuring cyberbullying within the larger context of bullying victimization. *J Adolesc Health.* 2012; 51:53–58.10.1016/j.jadohealth.2011.12.031 [PubMed: 22727077]
11. Cornell, D.; Cole, J. Assessment of bullying. In: Jimerson, SR.; Nickerson, AB.; Mayer, MJ., et al., editors. *The handbook of school violence and school safety: International research and practice.* 2. Mahwah, NJ: Routledge; 2011. p. 289-303.
12. Olweus, D. *Bullying at school.* Oxford, UK: Blackwell Publishing; 1993.
13. Olweus, D. Understanding and researching bullying: Some critical issues. In: Jimerson, SR.; Swearer, SM.; Espelage, DL., editors. *Handbook of bullying in schools: An international perspective.* New York, NY: Routledge; 2010. p. 9-34.
14. Rodkin PC, Espelage DL, Hanish LD. A relational perspective on the social ecology of bullying. *Am Psychol.* under review.
15. Gladden, RM.; Vivolo-Kantor, AM.; Hamburger, ME., et al. Bullying surveillance among youths: Uniform definitions for public health and recommended data elements, version 1.0. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention and U.S. Department of Education; 2013.
16. Ybarra ML, Mitchell KJ, Wolak J, et al. Examining characteristics and associated distress related to Internet harassment: Findings from the Second Youth Internet Safety Survey. *Pediatrics.* 2006; 118:e1169–e1177.10.1542/peds.2006-0815 [PubMed: 17015505]
17. Ybarra ML, Mitchell KJ. Prevalence and frequency of Internet harassment instigation: Implications for adolescent health. *J Adolesc Health.* 2007; 41:189–195.10.1016/j.jadohealth.2007.03.005 [PubMed: 17659224]
18. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance --- United States, 2005. *Youth Risk Behavior Surveillance --- United States, 2005–2006.* 55:1–108.
19. Dahlberg, LL.; Toal, SB.; Swahn, M.; Behrens, CB. Measuring violence-related attitudes, behaviors, and influences among youths: A compendium of assessment tools. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2005. Available at: http://www.cdc.gov/ncipc/pub-res/pdf/YV/YV_Compendium.pdf [Accessed April 26, 2013]
20. Haroz EE, Ybarra M, Eaton WW. Psychometric evaluations of a self-report scale to measure adolescent depression: The CESDR-10 in two representative adolescent samples in the United States. *J Affect Disord.* In press.
21. Rosenberg, M. *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press; 1965.
22. Zimet GD, Dahlem NW, Zimet SG, et al. The Multidimensional Scale of Perceived Social Support. *J Pers Assess.* 1988; 52:30–41.10.1207/s15327752jpa5201_2
23. Finkelhor, D.; Mitchell, KJ.; Wolak, J. Online victimization: A report on the nation's youth. Alexandria, VA: National Center for Missing & Exploited Children; 2000. Available at: <http://www.unh.edu/ccrc/pdf/jvq/CV38.pdf> [Accessed April 26, 2013]
24. Berrens RP, Bohara AK, Jenkins-Smith H, et al. The advent of Internet surveys for political research: A comparison of telephone and Internet samples. *Polit Anal.* 2003; 11:1–22.10.1093/pan/11.1.1

25. Schonlau M, Zapert K, Simon LP, et al. A comparison between response from a propensity-weighted Web survey and an identical RDD survey. *Soc Sci Comput Rev.* 2004; 22:128–138.10.1177/0894439303256551
26. Terhanian G, Siegel JW, Overmeyer C, et al. The record of Internet-based opinion polls in predicting the results of 72 races in the November 2000 US elections. *Int J Market Res.* 2001; 43:127–138.
27. Berrens RP, Bohara AK, Jenkins-Smith HC, et al. Information and effort in contingent valuation surveys: Application to global climate change using national internet samples. *J Environ Econ Manage.* 2004; 47:331–363.10.1016/S0095-0696(03)00094-9
28. Bureau of Labor Statistics, Bureau of the Census. [Accessed July 5, 2006] Current Population Survey. 2006. Available at: <http://www.census.gov/cps/>
29. StataCorp. Stata Statistical Software. College Station, TX: StataCorp LP; 2009. Release 11
30. Rivers I, Noret N. I h8 u: findings from a five-year study of text and email bullying. *Br Educ Res J.* 2010; 36:643–671.10.1080/01411920903071918
31. Smith PK, Mahdavi J, Carvalho M, et al. Cyberbullying: Its nature and impact in secondary school pupils. *J Child Psychol Psychiatry.* 2008; 49:376–385.10.1111/j.1469-7610.2007.01846.x [PubMed: 18363945]
32. Slonje R, Smith PK, Frisen A. Processes of cyberbullying, and feelings of remorse by bullies: A pilot study. *Eur J Dev Psychol.* 2012; 9:244–259.10.1080/17405629.2011.643670
33. Mitchell, KJ.; Jones, LM. Youth Internet Safety (YISS) Study: Methodology report. Durham, NH: Crimes Against Children Research Center, University of New Hampshire; 2011. Available at: http://www.unh.edu/ccrc/pdf/YISS_Methods_Report_final.pdf [Accessed April 26, 2013]
34. Lenhart, A.; Purcell, K.; Smith, A., et al. Social media and young adults. Washington, DC: Pew Internet & American Life Project; 2010. Available at: <http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx> [Accessed April 26, 2013]
35. Visconti KJ, Sechler CM, Kochenderfer-Ladd B. Coping with peer victimization: the role of children's attributions. *Sch Psychol Q.* 2013; 28:122–140.10.1037/spq0000014 [PubMed: 23506020]
36. Kingsbury WL, Espelage DL. Attribution style and coping along the bully victim continuum. *Scientia Paedagogica Experimentalis.* 2007; 64:71–102.
37. Turner HA, Finkelhor D, Shattuck A, et al. Beyond bullying: Aggravating elements of peer victimization episodes. *Sch Psychol Q.* In press.

Implications and Contribution This study confirms that differences in observed prevalence rates are in part due to differences between youth affected by cyberbullying and generalized peer aggression (Internet harassment). Differential power and intensity are key features of bullying and discriminate between bullied youth in terms of impact. Both need to be measured directly.

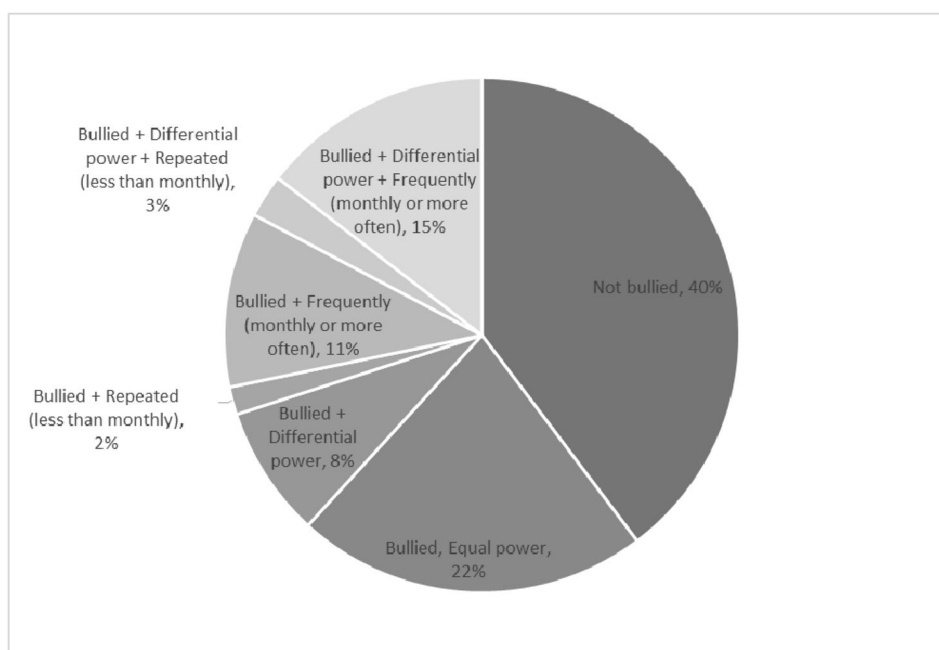


Figure 1.
Past year prevalence rates of bullying victimization (n=3777)

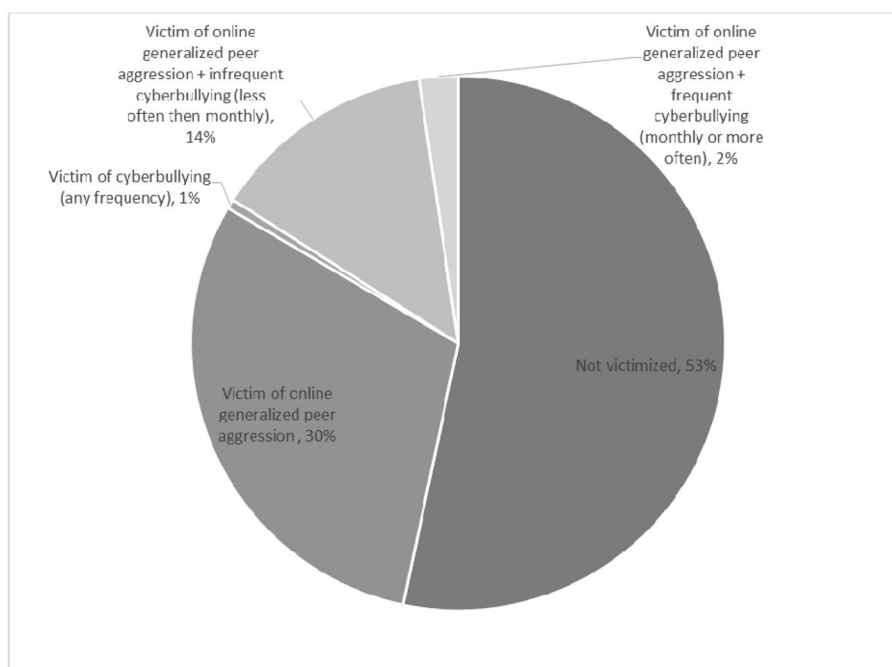


Figure 2.
Overlap between online generalized peer aggression and cyberbullying (n=1150)

Table 1
Impact of bullying given different bullying features among youth who reported being bullied (n = 2,293)

Impact of bullying	Bullied, Equal power (22%, n=860)	Bullied + Differential power (8%, n=320)	Bullied + Repeated (less than monthly) (2%, n=72)	Bullied + Frequently (monthly or more often) (11%, n=392)	Bullied + Differential power + Repeated (less than monthly) (3%, n=102)	Bullied + Differential power + Frequent (monthly or more often) (15%, n=547)	P-value
Interference with... (somewhat / a lot)							
School work	6%	10%	14%	26%	40%	50%	<0.001
Friendships	11%	16%	27%	31%	46%	53%	<0.001
Parental relationships	3%	4%	3% ^a	14% ^a	26%	29%	<0.001
Upset about bullying (very/extremely)	21%	36%	48% ^a	31% ^a	60%	65%	<0.001
Beliefs about bullying							
Being bullied is just a part of life for someone like me (somewhat / strongly agree)	15%	24%	21%	27%	27% ^b	48% ^b	<0.0
There are people in my life who can protect me from bullying (somewhat / strongly disagree)	7%	14%	3% ^a	12% ^a	13%	17%	<0.001

Differences in rates across rows were measured using an F-statistic, which is a chi-square test corrected for survey weights

^a Statistically significant difference (p<0.05) between 'monthly or more often' and 'repeated' youth.

^b Statistically significant difference (p<0.05) between 'Bullied + Differential power + Repeated' and 'Bullied + Differential power + Frequent' youth

Table 2

A multinomial logistic regression model estimating the relative odds of different bullying experiences given psychosocial and demographic indicators (n=3,777)^{ab}

Youth Indicators	Bullied, Equal power (22%, n=860)	Bullied + Differential power (8%, n=320)	Bullied + Repeated (less than monthly) (2%, n=72)	Bullied + Frequently (monthly or more often) (11%, n=392)	Bullied + Repeated power + Repeated (less than monthly) (3%, n=102)	Bullied + Differential power + Frequent (monthly or more often) (15%, n=547)
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Psychosocial indicators						
High self esteem	0.56 (0.45, 0.71)	0.32 (0.23, 0.46)	0.41 (0.22, 0.76)	0.29 (0.20, 0.41)	0.53 (0.30, 0.94)	0.21 (0.14, 0.31)
Major depressive symptomatology	0.92 (0.67, 1.26)	1.11 (0.75, 1.68)	0.72 (0.33, 1.58)	<i>1.39 (0.97, 2.00)</i>	1.08 (0.57, 2.04)	2.61 (1.90, 3.58)
Strong social support	0.57 (0.44, 0.73)	0.64 (0.43, 0.96)	0.92 (0.49, 1.69)	0.63 (0.44, 0.91)	0.48 (0.26, 0.90)	0.59 (0.42, 0.83)
Caregiver-child relationships						
Poor parental monitoring - in person	1.00 (0.71, 1.42)	0.57 (0.32, 1.01)	0.79 (0.32, 1.94)	1.24 (0.82, 1.90)	1.88 (1.03, 3.41)	1.60 (1.06, 2.42)
Poor parental monitoring - via technology	<i>0.73 (0.51, 1.03)</i>	1.11 (0.66, 1.88)	0.97 (0.39, 2.40)	0.88 (0.54, 1.43)	0.84 (0.37, 1.92)	0.80 (0.51, 1.24)
Coercive discipline	1.41 (0.90, 2.22)	1.01 (0.55, 1.86)	1.72 (0.64, 4.58)	2.02 (1.27, 3.22)	0.65 (0.24, 1.76)	1.96 (1.26, 3.05)
Poor emotional bond	1.17 (0.79, 1.72)	1.17 (0.68, 2.00)	0.65 (0.21, 2.02)	1.07 (0.69, 1.67)	<i>1.83 (0.95, 3.51)</i>	1.02 (0.69, 1.52)
Demographic characteristics						
Female gender	1.28 (1.04, 1.56)	1.12 (0.83, 1.52)	2.10 (1.19, 3.70)	1.00 (0.75, 1.33)	1.42 (0.86, 2.33)	0.98 (0.76, 1.26)
Age	0.90 (0.85, 0.96)	0.88 (0.81, 0.96)	0.96 (0.82, 1.13)	0.85 (0.78, 0.93)	0.73 (0.62, 0.86)	0.74 (0.68, 0.80)
White race	1.37 (1.06, 1.76)	1.47 (1.01, 2.14)	2.31 (1.22, 4.37)	1.26 (0.89, 1.78)	1.91 (1.01, 3.60)	1.73 (1.25, 2.40)
Hispanic ethnicity	0.88 (0.63, 1.24)	1.13 (0.71, 1.78)	1.09 (0.47, 2.53)	0.96 (0.62, 1.49)	1.24 (0.64, 2.40)	0.78 (0.50, 1.22)
Low income (<=\$30,000 py)	0.85 (0.67, 1.08)	<i>1.35 (0.99, 1.86)</i>	1.27 (0.71, 2.30)	1.13 (0.83, 1.52)	1.56 (0.92, 2.65)	1.42 (1.08, 1.88)
Survey process indicators						
Self-reported dishonesty	0.74 (0.28, 1.95)	0.48 (0.10, 2.42)	1.12 (0.14, 8.82)	1.00 (0.25, 3.98)	Not Calculable	1.00 (0.40, 2.50)
Not alone when completing the survey	0.92 (0.74, 1.14)	0.88 (0.65, 1.20)	1.30 (0.77, 2.21)	1.40 (1.06, 1.86)	1.05 (0.64, 1.73)	0.84 (0.65, 1.10)

^a 'Not bullied' (40%, n=1,484) is the reference category.

^b **Bold denotes statistical significance (p<0.05).** *Italics denote marginal significance (p<0.10)*

Table 3

Multinomial logistic regression model estimating the relative odds of Internet victimization given youth psychosocial and demographic characteristics (n=1,150)^a

Personal characteristics	Victim of generalized peer aggression (GPA) (only) (30%, n=339)	Victim of cyberbullying (infrequent) n=151	Victim of cyberbullying (monthly or more often) (2%, n=32)
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Psychosocial characteristics			
Alcohol use (ever)	1.81 (1.05, 3.12)	2.43 (1.25, 4.73)	7.53 (2.25, 25.21)
Depressive symptomatology	<i>1.01 (0.98, 1.05)</i>	1.06 (1.01, 1.10)	1.11 (1.03, 1.20)
Caregiver-child emotional closeness	1.20 (1.07, 1.34)	1.15 (1.01, 1.32)	<i>1.20 (0.95, 1.52)</i>
Demographic characteristics			
Male	0.67 (0.44, 1.03)	1.11 (0.60, 2.05)	0.39 (0.13, 1.14)
White race	1.13 (0.68, 1.87)	2.74 (1.33, 5.68)	0.88 (0.29, 2.73)
Hispanic ethnicity	1.40 (0.77, 2.54)	1.38 (0.59, 3.23)	0.30 (0.02, 4.91)
Low income (<=\$30,000)	0.97 (0.55, 1.68)	1.13 (0.55, 2.35)	1.95 (0.56, 6.80)
Age	<i>1.12 (0.97, 1.29)</i>	1.22 (1.04, 1.44)	0.99 (0.69, 1.42)
Media use	1.66 (1.27, 2.16)	1.80 (1.26, 2.57)	<i>1.68 (0.95, 2.98)</i>
Survey process measures			
Self-reported dishonesty	0.30 (0.10, 0.92)	0.03 (0.00, 0.26)	0.15 (0.01, 1.49)
Not alone when completing the survey	1.28 (0.81, 2.01)	1.14 (0.64, 2.05)	0.56 (0.14, 2.23)

^aNon-victimized youth (n=628) are the reference category.

CI = Confidence Interval; GPA = generalized peer aggression

Bold denotes statistical significance ($p < .05$). Italics denote marginal significance ($p < .10$).

Because of the low number of youth who reported cyberbullying but not generalized peer aggression, youth in the two cyberbullying categories are included based upon the frequency of cyberbullying reported, irrespective of their report of generalized peer aggression.